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1969 Corn Performance Trials

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1969 CORN PERFORMANCE TRIALS



PLANT SCIENCE DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY

LISTING OF CORN TRIAL TABLES

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1969 Corn Performance Trials

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The primary purpose of this circular is to supply interested individuals with information on the relative performance of the hybrids entered in each test, when grown under similar environmental conditions. Information in the accompanying tables includes acre grain yields in bushels, moisture percentages of either ear or shelled corn when harvested, performance scores and other related information. Records of performance of the corn hybrids harvested in 1969 are presented as well as two-, three-, four-, and five-year averages of yield and moisture percentages where available. The trials reported herein have been conducted under the Plant Science Department program in Crop Performance Testing, Agricultural Experiment Station.

Location of the 1969 Trials

The trials were planted in the crop adaptation areas marked on the South Dakota map, page 9. The exact locations of each trial and the date of seeding and harvesting are given in Table 1. The soil classification, laboratory analysis of soil samples taken before or at seeding time, and fertilizer applied, are presented in Table 2.

Weather and Climatic Conditions

The climatic data for the 1969 corn growing season is based upon data from a U.S. Weather Bureau Station reasonably near the trial. No data are presented for the Geddes site but precipitation was above normal in June and July, dry in August and early September.

May was quite dry until the latter part of the month after seeding. The cool, wet soil was not favorable for rapid germination. Precipitation was above normal at most locations in June and July while temperatures were below normal during the same period. The cooler, wet period did not favor rapid growth. A hail storm on June 21 caused severe damage to plots at the Southeast Experiment Farm.

August was quite dry in most areas but the temperatures did not reach extreme highs. Precipitation began to fall again in mid-September and was above normal through October. The cool summer, even at sites with adequate moisture and moisture distribution, slowed growth in many areas. Excessive precipitation at the Parkson site in June caused stand losses and abandonment of the higher population trial.

The assistance of the following individuals is appreciated: D. B. Shank of the Plant Science Department; Sub-station supervisors Albert Dittman, Lloyd Dye, Jake Fredrikson, Quentin Kingsley, Burton Lawrensen, and Herb Lund; and farmer-cooperators William Fijala and Milton Freier.

TABLE 1. LOCATION OF THE 1969 CORN PERFORMANCE TRIALS

Area	County	Location	Post office	Date	
				Seeded	Harvested
B2	McPherson	North Central Substation	Eureka	May 27	Oct. 20
Cl-dry	Spink	Redfield Devel. Farm, 6E	Redfield	May 26	Oct. 21
Cl-irr	Spink	Redfield Devel. Farm, 6E	Redfield	May 26	Oct. 21
C2	Charles Mix	Wm. Fijala Farm, 3E	Geddes	May 19	Oct. 16
D1	Grant	Whetstone Farm, 5W	Milbank	May 29	Oct. 23
D3	Brookings	Agronomy Farm, 2NE	Brookings	May 14	Nov. 6
D4	Hutchinson	Milton Freier Farm 2E	Parkston	May 20	Oct. 17
E	Clay	SE Experiment Farm, 7W, 3E	Beresford	May 13	Oct. 29

Even though the season was cool and wet in late September, a killing frost did not occur at most sites until mid-October. The first-frost temperatures shown in Table 3, though below 32 degrees, damaged only the uppermost leaves and the stalks were still green and capable of transporting moisture. The lateness of a killing frost permitted most corn to mature physiologically. However, corn did not dry readily and 23-25 percent moisture was common in much of the corn at time of harvest. Despite the adverse conditions at various locations, record breaking yields occurred in many areas, especially the southeastern portion of South Dakota.

Hybrid Entry Procedure

Hybrids entered are submitted by the participating commercial concerns and they designate the locations where their entries are to be grown. Hybrids that were registered with the South Dakota State Department of Agriculture prior to March 17, 1969, were eligible for entry. A fee was charged for each entry in each area except for entries included by Experiment Station personnel. Either closed or open pedigree hybrids were eligible and each was allowed to be entered once in each area.

TABLE 2. LABORATORY ANALYSIS, SOIL CLASSIFICATION AND FERTILIZER APPLIED TO THE 1969 CORN PERFORMANCE TRIALS

Location	Soil classification	% O.M.	P	K	phi	Fertilizer Applied		
						Method	N	P - K
				lbs/A			lbs/A	
B2	Williams L	4.1	140	682	7.2	10 T manure	12	16
Cl-dry	Beotia-Harmony SiCl	3.2	57	594	7.3	plowed down	70	40
Cl-irr	Beotia-Harmony SiCl	3.5	70	682	7.0	plowed down	125	40
C2	Reliance SiCL	3.6	16	682	7.6	anhydrous	50	0
D1	Peever CL	3.0	21	397	6.7	plowed down	60	40
D3	Vienna L	3.2	33	222	6.6	plowed down		30 30
D4	Houdek L	2.2	19	327	6.6	disced under	72	35
E	Kransburg SiCL	3.0	98	682	6.8	plowed down	135	30 40

TABLE 3. PRECIPITATION AND TEMPERATURE DATA FOR THE 1969 CORN GROWING SEASON OF SOUTH DAKOTA

Location and district	Month	Precipitation, inches			Temperatures in degrees F.		
		Month total	Departure from normal	Total departure	Month mean temp.	Departure from normal	Average departure
Eureka B2	May	1.59	-1.00		57.9	1.8	
	June	3.81	-0.02		58.9	-6.1	
	July	4.70	2.25		69.4	-3.0	
	August	1.34	-1.07		73.0	2.3	
	Sept.	0.33	-0.99		62.1	2.0	
	Oct.	0.73	-0.24	-1.07	41.4	-6.2	-1.5
		12.50					
		Last freeze 30° - June 20			First frost 27° - Oct. 8		
Redfield 6E C1	May	2.37			59.4		
	June	2.98			61.5		
	July	3.14			72.3		
	August	1.41			74.8		
	Sept.	1.37			67.7		
	Oct.	1.54			41.6		
		12.81					
		Last freeze 31° - June 14			First frost 27° - Oct. 8		
Milbank D1	May	3.54			60.1	1.5	
	June	2.17			61.2	-6.6	
	July	4.66			71.8	-2.4	
	August	0.47			73.9	1.7	
	Sept.	0.73			62.8	0.5	
	Oct.	2.62			43.6	-6.9	-2.0
		14.19					
		Last freeze 32° - April 28			First frost 31° - Oct. 12		
Brookings D3	May	3.02	0.23		56.9	-0.7	
	June	7.20	3.25		58.5	-8.6	
	July	3.48	1.33		69.6	-3.6	
	August	1.49	-1.48		69.7	-1.5	
	Sept.	1.32	-0.71		59.8	-1.5	
	Oct.	2.17	0.95	3.57	42.0	-7.5	-3.9
		18.68					
		Last freeze 12° - May 12			First frost 31° - Oct. 8		
Parkston 5E D4	May	3.89	1.09		62.3		
	June	5.03	1.22		64.4		
	July	4.62	2.22		73.9		
	August	1.67	-1.19		74.0		
	Sept.	2.04	-0.18		65.2		
	Oct.	3.09	1.93	5.09	45.5		
		20.34					
		Last freeze 28° - April 29			First frost 30° - Oct. 8		
Centerville 6E E	May	3.13			62.5		
	June	4.11			64.6		
	July	4.64			74.5		
	August	3.94			72.6		
	Sept.	1.26			64.2		
	Oct.	3.01			45.8		
		20.09					
		Last freeze 31° - May 12			First frost 26° - Oct. 8		

A listing of the entries and the tables in which they are included is presented in Table 20.

Experimental Procedure

The entries included in each test were planted in five or six replications. Plots of individual hybrid entries were located at random within each replication. Available space, soil type and other factors determine the plot size and number of replications. The plot size, desired populations and related data are listed in Table 4.

TABLE 4. FIELD METHODS FOR THE 1969 CORN TRIAL SITES

Area	Table No.	Number of replications harvested	Method of planting	Population desired or obtained	Row		
					Number of	Width, inches	Length, feet
B2		6	drilled	9,000	1	40	39
C1-dry		5	drilled	10,400	1	36	39
C1-irr.		5	drilled	18,600	1	36	39
C2		5	drilled	10,000	1	40	39
D1		3	drilled	11,900 ^a	1	36	39
D1		3	drilled	14,800 ^a	1	36	39
D3		3	drilled	10,000	1	40	39
D3		3	drilled	14,000	1	40	39
D4		3	drilled	12,000	1	38	39
D4		3	drilled	15,100 ^b	1	38	39
E		3	drilled	15,200 ^a	1	30	32
E		3	drilled	19,000 ^a	1	30	32

a - no significant difference between populations, mean of two reported in tables

b - this portion of trial abandoned; stand very erratic

A recommended organic phosphate insecticide was used at the Area E site for corn root-worm control. A recommended short-residual pre-emergence herbicide was used at the B2, C1, C2, D1 and D4 sites. Atrazine was applied at the D3 and E sites for grassy weed control.

All plots were seeded as drilled corn using cone seeders mounted over runner openers. The planting rate was 20% greater than desired and the plots were thinned to the desired population when necessary. At the D4 site wet conditions caused losses greater than anticipated and the high population part of the trial was lost.

TABLE 5. HARVEST AND MOISTURE DETERMINATIONS FOR THE 1969 CORN TRIALS

Area	Harvest method	Samples used for moisture determination	Moisture determined
B2	Hand picked	ear sections	oven-dried
C1-dry	Picker-sheller	shelled corn	electronically
C1-irr.	Picker-sheller	shelled corn	electronically
C2	Hand picked	ear corn	oven-dried
D1	Picker-sheller	shelled corn	electronically
D3	Picker-sheller	shelled corn	electronically
D4	Hand picked	ear corn	oven-dried
E	Picker-sheller	shelled corn	electronically

Measurements of Performance

Yield. The yield reported for each hybrid in each trial is the average obtained from field weights of all replications, expressed as bushels per acre of No. 2 corn at 15.5 percent moisture. Varieties of equal potential may yield differently because of variations in slope, soil fertility and stand. Mathematical determinations have been made to ascertain whether yield differences obtained were caused by variations in environment or were true varietal differences.

Duncan's Multiple Range Test (5% level) was used to determine whether significant differences occurred. The line drawn between any two entry means in the 1969 yield data indicates that there is no difference between entries above that line at the 5% level of probability.

Moisture Content. The moisture content of each entry is expressed as the percentage of moisture either in the ear corn or shelled corn at the time of harvest (see Table 5). Moisture content is inversely related to maturity and, because maturity is of prime importance in South Dakota, these figures are of considerable importance in evaluating entries.

Performance Rating. Undue delays should be held to a minimum if farm operations are to be efficient and provide high economic returns. Delaying the harvest and additional drying costs can be reduced if an operator can produce sound, dry corn. Grain yield and moisture percentage are of prime importance. Because of the importance of these two factors, the two primary results obtained in these trials are used to determine this rating.

Using the two primary results, the yields in each test were converted to percentages by comparing them with the mean yield of that test. Similar calculations were made for moisture at harvest time after first subtracting moisture content from 100 so that varieties would be ranked according to their ability to produce sound, rather than soft, corn.

The performance ratings that appear in the tables were computed as follows:

$$\frac{(\text{Yield percentage} \times 6) + (\text{Moisture percentage} \times 4)}{10}$$

Lodging. Root lodging was a problem at only one site, the irrigated C1 trial. High winds in excess of 100 m.p.h. lashed the area in late August. This occurred during a rainstorm shortly after an irrigation and all entries were pushed over to nearly a 45 degree angle. No attempt was made to record lodging. The trial was harvested with a single-row picker-sheller and very little loss was evident after harvest.

Stalk lodging is recorded in the "Percent Stalks Broken" column of the tables. The figure given is the percentage of all stalks of that entry at a particular trial site.

Use of the Tables. South Dakota conditions are generally quite different from those in the mid-western corn belt. Most of the crop adaptation areas have conditions common to the northern plains; limited frost-free growing periods, limited precipitation and high temperatures. Corn hybrids that yield statistically and produce corn that can be stored without additional costly handling are desirable. The performance score provides information on both these factors in a weighted fashion.

TABLE 6. CORN PERFORMANCE TRIAL, AREA B2, NORTHCENTRAL SUBSTATION, EUREKA, 1969

Variety	Cross	Performance rating	Percent stalks broken	Percent moisture, ear corn	Yield, B/A
Stull 627 TX	3x	3	5	40.0	41.4
Pioneer 3959	3x	2	10	29.8	40.5
SD Exp 59	2x	1	3	25.3	39.1
Pioneer 3956	2x	4	14	29.0	37.8
SD 230	4x	5	12	31.5	37.8
Stull 620 SX	2x	12	5	42.8	37.5
Pioneer 388	4x	8	19	32.2	36.0
Northrup-King PX446	3x	6	4	29.0	35.9
SD Exp 72	M3x	7	8	30.9	35.7
SD Exp 48	M3x	10	7	34.3	35.7
SD 248	3x	11	3	35.0	35.5
Northrup-King PX442	3x	9	6	31.5	34.9
SD 240	4x	14	6	35.9	33.7
Stull 604 SX	2x	15	3	38.8	33.5
SD Exp 43	4x	13	8	33.5	33.1
Stull 608 Y	4x	18	0	38.9	30.1
Pioneer 3862	4x	18	8	34.3	29.3
Pioneer 3935	2x	17	3	32.0	29.1
Pioneer 3872	4x	21	8	33.6	28.2
SD Exp 74	4x	16	3	26.4	27.6
SD 220	4x	22	13	28.0	26.0
Northrup-King PX417	3x	20	7	24.7	25.4
Northrup-King PX428	3x	23	7	27.6	24.8
Pioneer 3985	2x	24	19	26.9	18.2
			Mean	32.2	32.8

C.V. = 14.3%

TABLE 7. CORN PERFORMANCE TRIAL, AREA C1 (DRYLAND), REDFIELD IRRIGATION FARM, REDFIELD, 1969

Variety	Cross	Perfor- mance rating	Percent stalks broken	Percent moisture	Yield, B/A
Northrup-King PX476	3x	1	1	25.8	69.6
Northrup-King PX446	3x	2	13	26.5	57.6
Curry SC-142	2x	4	10	32.8	57.2
Western KX-33	2x	3	6	26.3	56.4
SD Exp 70	3x	6	6	29.0	54.3
Pioneer 3935	2x	5	14	24.5	52.5
Western K-1175	4x	10	6	28.6	51.4
SD PP101	M2x	7	11	25.4	51.3
SD 230	4x	9	22	25.7	50.3
Stull 604 SX	2x	12	8	29.8	50.3
SD 248	3x	11	12	27.3	49.5
SD PP111	M3x	15	8	30.9	49.4
SD Exp 59	2x	8	16	21.2	49.3
Pioneer 3910	2x	13	7	26.2	47.9
SD PP103	M2x	14	23	26.8	47.7
Stull 627 TX	3x	18	9	31.1	46.3
SD 240	4x	16	21	27.6	44.9
SD 250	4x	17	15	27.2	44.7
Western KT-327	3x	19	3	27.8	44.2
Pioneer 3676	4x	21	13	30.1	42.0
Stull 620 SX	2x	24	8	32.8	42.7
Curry TC-342	3x	25	24	33.3	42.4
Pioneer 3812	4x	20	9	27.0	42.1
Pioneer 3959	3x	22	28	24.2	39.9
Northrup-King PX442	3x	23	4	24.6	39.7
Stull 608 Y	4x	27	7	31.0	39.1
Pioneer 3956	2x	26	18	27.6	38.9
Pioneer 3681	4x	28	8	27.2	38.0
			Mean	27.8	47.9

C.V. = 10.5%

TABLE 8. TWO-, THREE-, FOUR-, AND FIVE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE AREA B2 TRIAL, 1965-1969

Variety	Percent moisture				Yield, bushels per acre			
	1965-69	1966-69	1967-69	1968-69	1965-69	1966-69	1967-69	1968-69
Northrup-King PX417				25.3				35.1
Northrup-King PX442				33.1				42.7
Northrup-King PX446			36.7	36.1			41.4	42.1
Pioneer 3862	33.9	32.7	35.2	36.8	36.6	38.5	35.4	38.7
Pioneer 3872		28.5	30.3	32.3		40.3	34.2	37.7
Pioneer 388	33.1	31.7	34.1	31.6	37.8	40.0	35.4	41.6
Pioneer 3935			34.1	37.1			34.0	34.2
Pioneer 3956			32.9	38.3			42.1	47.4
Pioneer 3959				32.1				47.5
Pioneer 3985				26.2				29.7
SD 220	27.0	26.5	27.7	32.6	35.5	35.8	34.3	36.3
SD 230	31.7	31.7	33.2	35.2	41.7	43.0	39.9	43.6
SD 240	35.0	33.6	34.9	39.1	38.0	40.8	42.4	42.6
SD 248	38.8	37.7	40.7	40.1	37.2	38.6	34.9	40.2
SD Exp 43		31.7	34.0	36.3		42.6	40.0	43.8
SD Exp 59			26.2	31.0				49.0
SD Exp 72				33.8				45.0

TABLE 9. TWO-, THREE-, FOUR-, AND FIVE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE DRYLAND AREA C1 TRIAL, 1965-1969.

Variety	Percent moisture				Yield, bushels per acre			
	1965-69	1966-69	1967-69	1968-69	1965-69	1966-69	1967-69	1968-69
Curry SC-142				31.8				68.8
Northrup-King PX446			22.2	24.3			60.6	59.9
Pioneer 3812	26.0	24.2	24.1	25.5	55.2	61.5	57.5	53.6
Pioneer 3935			21.4	22.8			61.0	57.4
Pioneer 3956			24.0	24.6			54.7	54.9
Pioneer 3959				23.4				50.8
SD 230			25.6	26.1			57.0	58.8
SD 240	29.0	27.2	26.5	27.8	51.6	56.5	56.2	56.3
SD 248	25.9	25.6	24.8	27.3	57.3	64.6	62.6	61.2
SD 250	26.2	24.9	24.5	26.2	54.1	61.5	56.8	55.0
SD Exp 59			19.8	21.3			57.6	56.3

TABLE 10. CORN PERFORMANCE TRIAL, AREA D1, WHETSTONE VALLEY RESEARCH FARM, MILBANK, 1969.

Variety	Cross	Performance score	Percent stalks broken	Percent moisture	Yield, B/A
SD PP102	M2x	1	1	26.4	80.7
SD PP112	M3x	2	2	25.5	77.2
Pioneer 3773	2x	7	1	30.7	76.8
SD Exp 75	3x	5	4	29.4	76.2
SD Exp 70	3x	4	1	27.8	75.4
Northrup-King PX442	3x	3	1	23.0	75.1
Northrup-King PX476	3x	8	4	25.8	73.7
SD Exp 52	3x	11	3	28.9	73.5
Pioneer 3910	2x	9	3	26.5	73.5
Pioneer 3956	2x	6	1	24.8	73.1
SD Exp 54	M3x	13	3	28.2	72.9
Coop S102	2x	12	1	27.3	72.4
Coop D110	4x	14	2	26.7	71.9
SD Exp 71	M3x	16	3	29.2	71.8
Stull 604 SX	2x	15	2	27.3	71.1
SD Exp 64	4x	18	3	27.8	69.9
Pioneer 3715	3x	21	1	30.7	69.7
Northrup-King PX428	3x	10	4	21.6	68.9
SD Exp 53	3x	19	7	28.0	68.8
SD Exp 63	3x	27	1	30.8	68.3
SD Exp 65	3x	23	2	28.8	67.9
SD PP101	M2x	20	1	27.8	67.9
Pioneer 3935	2x	17	1	24.4	67.8
Stull 620 SX	2x	26	1	29.9	67.8
Lincoln Mellowdent 16	2x	24	1	29.2	67.8
Northrup-King PX446	3x	25	3	25.9	65.7
Stull 608 Y	4x	29	3	28.7	65.2
Pioneer 3582	2x	31	0	30.1	64.7
SD 250	4x	28	3	26.5	64.5
SD 248	3x	30	5	28.3	63.9
Northrup-King PX 417	3x	22	2	20.4	63.1
SD 270	4x	32	5	28.4	61.9
SD PP105	M3x	35	2	32.9	60.9
Pioneer 3666	4x	33	3	29.4	60.4
Stull 627 Tx	3x	34	1	30.0	59.3
SD 420	4x	36	2	31.3	58.2
Lincoln Mellowdent 18	2x	37	0	41.3	38.5
			Mean	28.1	68.3

C.V. = 4.9%

TABLE 11. CORN PERFORMANCE TRIAL, AREA C1 (IRRIGATED), REDFIELD DEVELOPMENT FARM
REDFIELD, 1969

Variety	Cross	Perfor- mance rating	Percent stalks broken	Percent moisture	Yield, B/A
Western KX-55	2x	1	3	30.0	157.5
Currys SC-142	2x	3	1	30.2	156.3
SD Exp 63	3x	2	2	28.9	155.0
McCurdy's 2 X 4	2x	4	4	30.3	147.2
Stull 604 SX	2x	5	1	29.9	144.6
SD Exp 70	3x	6	4	28.5	142.5
Stull 627 TX	3x	7	7	29.6	142.2
SD Exp 65	3x	8	1	29.6	141.0
Northrup-King PX525	3x	9	5	28.5	138.3
Northrup-King PX545	3x	10	2	28.7	135.9
SD PP111	M3x	11	4	28.4	134.2
Stull 620 SX	2x	12	4	28.3	133.6
Northrup-King PX556	3x	16	3	30.1	133.2
Barzan BXL-105-3	3x	19	4	29.6	130.3
Barzan BXL-100-3	3x	17	3	27.1	129.6
SD 248	3x	15	8	26.9	129.5
Curry's TC-342	3x	18	1	27.4	129.2
SD Exp 52	3x	13	9	24.1	128.5
Western KX-33	2x	14	7	24.7	127.5
McCurdy's 66-01	2x	21	2	27.7	127.5
SD PP101	M2x	24	4	26.8	125.3
SD PP103	M2x	22	19	25.8	124.9
Stull 608 Y	4x	27	4	26.7	124.1
Pioneer 3910	2x	23	5	24.9	123.2
Northrup-King PX519	3x	29	1	29.3	123.0
Northrup-King PX476	3x	20	6	21.8	121.2
Weathermaster 375	4x	30	15	27.1	120.2
Pioneer 3956	2x	26	4	23.1	120.0
Northrup-King PX446	3x	25	18	22.5	119.5
Pioneer 3926	2x	28	4	24.7	119.3
SD 240	4x	32	22	26.2	117.6
Weathermaster EP30	M2x	34	12	27.0	117.2
SD 270	4x	36	14	27.1	116.0
SD 250	4x	35	9	25.8	115.9
Pioneer 3935	2x	31	4	24.1	115.3
Weathermaster EPX-4	2x	37	4	27.0	113.5
Pioneer 3959	3x	33	12	22.3	113.0
Pioneer 3676	4x	38	8	26.6	111.8
Weathermaster EP40	M2x	40	16	27.2	110.4
Pioneer 3812	4x	39	9	25.7	110.2
Barzan BXL-95-3	3x	41	3	24.4	106.0
Weathermaster EPX-3P	2x	42	9	27.1	104.8
			Mean	26.9	127.0

C.V. = 6.5%

TABLE 12. TWO-, AND THREE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE AREA C (IRRIGATED) TRIAL, 1967-1969

Variety	Percent moisture		Yield, bushels per acre	
	1967-1969	1968-1967	1967-1968	1968-1969
Curry SC-142		31.5		141.0
Northrup-King PX446	26.2	23.5	123.3	114.2
Northrup-King PX525	30.3	28.7	139.2	132.8
Northrup-King PX556		30.8		134.9
Pioneer 3812	28.0	26.1	118.7	111.9
Pioneer 3926	27.5	26.8	119.0	120.2
Pioneer 3935	28.1	26.2	117.5	109.4
Pioneer 3956	25.4	23.9	117.7	115.1
Pioneer 3959		23.8		108.1
SD 240	28.4	27.8	112.0	111.2
SD 248	28.7	30.0	124.0	117.1
SD 250	28.5	28.0	115.3	111.7
SD 270	27.5	28.3	117.5	109.2
SD Exp 52	25.1	24.4	128.2	124.2
SD Exp 63	29.4	30.0	145.5	144.1
SD Exp 65	31.7	31.7	132.3	130.8

TABLE 13. CORN PERFORMANCE TRIAL, AREA C2, WM. FIJALA FARM, GEDDES, 1969

Variety	Cross	Perfor- mance score	Percent stalks broken	Percent moisture, ear corn	Yield, B/A
Pioneer 3390	M2x	9	0	32.8	83.0
Green Acres L17	4x	8	4	31.2	82.5
Pioneer 3567	2x	2	0	26.6	82.1
Northrup-King PX610	3x	3	1	25.8	81.4
Pioneer 3715	3x	1	0	21.8	80.1
Pioneer 3365	3x	12	0	32.5	79.4
Curry's TC-342	3x	5	1	24.0	79.4
Northrup-King PX545	3x	4	3	23.8	79.3
Nebr. 501 G	4x	11	0	27.6	77.6
Stull 627 TX	3x	6	1	22.7	77.4
Pioneer 3773	2x	7	1	21.6	76.3
Green Acres 447	M3x	20	2	33.4	75.2
Northrup-King PX580	3x	16	1	28.3	74.7
Pioneer 3570	2x	14	1	27.9	74.5
Weathermaster EPX-5P	2x	17	0	28.9	74.3
Coop T106	3x	10	0	19.8	73.8
Weathermaster 475	4x	13	4	24.3	73.6
Pioneer 3505	M2x	15	0	26.5	73.5
Pioneer 3510	2x	23	1	32.8	72.5
Weathermaster EPX-6	2x	18	0	25.8	72.3
Pioneer 3579	3x	19	1	24.4	71.1
Northrup-King PX50	2x	21	0	26.5	70.4
Weathermaster EP60	M2x	25	1	30.5	70.4
Weathermaster EPX-8	2x	30	2	37.4	69.7
Northrup-King PX 47	2x	22	1	24.9	68.7
Curry's TC-358	3x	29	1	32.6	67.4
Northrup-King PX556	3x	24	1	21.4	64.8
Green Acres 401	4x	32	3	32.5	63.2
SD 420	4x	28	11	22.4	62.0
SD 270	4x	26	8	17.7	61.2
Sull 604 SX	2x	27	3	20.2	60.9
Pioneer 3582	2x	33	0	25.0	57.9
Stull 620 SX	2x	31	4	21.8	57.4
Stull 608 Y	4x	34	3	22.2	56.0
			Mean	26.4	71.9

C.V. = 8.6%

TABLE 14. TWO-, AND THREE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE AREA C2 TRIAL, 1967-1969

Variety	Percent moisture		Yield, B/A	
	1967-1969	1968-1969	1967-1969	1968-1969
Green Acres 401		31.4		62.9
Nebr. 501G	31.9	30.6	51.6	67.0
Northrup-King PX50	26.6	27.2	60.6	63.3
Northrup-King PX556		21.8		60.8
Northrup-King PX580		28.5		64.3
Northrup-King PX610	26.9	27.7	63.2	70.6
Pioneer 3365		32.8		72.3
Pioneer 3390		32.8		69.5
Pioneer 3505		31.8		66.6
Pioneer 3510	32.5	34.3	64.2	69.6
Pioneer 3567	28.6	28.6	57.8	67.5
Pioneer 3570		28.6		65.0
Pioneer 3582		26.0		61.3
Pioneer 3715	36.3	25.3	55.5	63.5
SD 270	17.5	18.2	48.1	55.7
SD 420		24.8		55.7

TABLE 15. CORN PERFORMANCE TRIAL, AREA E, SOUTHEAST RESEARCH FARM, BERESFORD, 1969

Variety	Cross	Performance score	Percent stalks broken	Percent moisture	Yield, B/A
Pioneer 3510	2x	1	0	28.3	191.1
Pioneer 3505	M2x	2	1	28.2	169.2
Pioneer 3390	M2x	4	1	28.1	160.1
Curry's SC-142	2x	3	2	24.6	159.0
Pioneer 3291	4x	8	1	29.2	156.0
Pioneer 3571	M2x	5	2	26.4	156.0
Lincoln Mellowdent 18	2x	11	1	28.8	155.1
Northrup-King PX 50	2x	6	1	24.9	154.1
Pioneer 3365	3x	12	0	28.1	154.0
Northrup-King PX580	3x	7	1	25.1	153.1
Nebr. 501G	4x	16	1	29.0	152.0
Curry's SC-158	2x	10	1	25.3	151.0
Northrup-King PX 47	2x	9	0	24.5	150.0
Pioneer 3567	2x	14	2	26.2	150.0
McCurdy's HP4	3x	17	1	26.7	149.1
Wilson's WXS-1016	2x	13	1	24.6	149.0
Curry's SC-162	2x	23	2	29.1	148.1
Curry's TC-345	3x	19	0	26.5	148.0
SD PP105	M3x	18	4	25.1	147.1
Wilson's WXS-1118	2x	15	1	23.8	147.0
Stull 620 SX	2x	20	1	24.4	145.0
Northrup-King PX545	3x	21	1	23.8	144.1
Curry's TC-342	3x	22	1	23.1	142.1
Pioneer 3387	2x	26	0	27.0	142.1
Asgrow ATC 79	3x	29	1	28.2	142.1
McCurdy's 2 X 4	2x	24	1	24.6	141.1
McCurdy's 112M	4x	27	1	26.4	141.0
Barzan BXL-110-3	3x	25	1	23.7	138.0
Coop S201	2x	28	0	23.8	137.1
Coop T207	3x	32	0	25.3	137.1
Barzan BXL-105-3	3x	30	1	25.0	137.0
Pioneer 3570	2x	32	0	25.2	135.1
Northrup-King PX610	3x	34	1	26.1	135.1
Curry's TC-358	3x	41	1	27.7	135.1
Pioneer 3715	3x	31	0	22.6	134.0
Green Acres Ex12	M2x	37	1	25.0	133.0
Northrup-King PX556	3x	36	2	24.0	132.1
McCurdy's 66-03	2x	40	1	24.9	132.1
Asgrow IXL 4	2x	35	1	23.0	131.1
Stull 627 TX	3x	38	0	23.6	131.0
McCurdy's 3 X 6	2x	42	1	25.8	130.1
McCurdy's 2 X 5	2x	43	1	26.9	130.0
SD Exp 76	3x	39	2	23.0	130.0
Minn. 417	3x	44	0	24.9	126.1
SD PP107	M2x	45	6	25.4	126.0
McCurdy's 66-02	2x	46	4	25.6	125.1
Coop D209	4x	47	1	27.3	125.1
Coop D205	2x	49	4	28.1	124.1
SD 604	4x	48	1	26.5	122.1
SD PP106	M3x	50	1	26.0	117.0
SD PP108	M3x	52	1	24.4	113.1
Stull 608 Y	4x	51	1	22.2	112.0
Stull 604 SX	2x	53	1	22.6	107.1
SD PP110	M3x	55	3	25.6	106.1
Barzan BXL-100-3	3x	54	1	21.9	102.0
			Mean	25.6	132.3

C.V. = 4.7%

TABLE 16. TWO-, THREE-, FOUR-, AND FIVE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE AREA E TRIAL, 1965-1969

Variety	Percent moisture				Yield, bushels per acre			
	1965-69	1966-69	1967-69	1968-69	1965-69	1966-69	1967-69	1968-69
Asgrow ATC 79				27.3				144.0
Curry's SC-142				26.3				145.3
Curry's TC-358				26.5				140.9
McCurdy's HP4				26.2				143.7
McCurdy's 112M		30.3	26.0	27.4	131.4	131.2		137.2
McCurdy's 2 X 4				26.4				141.4
McCurdy's 3 X 6		25.1	26.1	26.9	133.7	131.0		131.9
Minn. 417	22.5	22.5	23.4	25.1	120.7	123.1	119.8	124.9
Nebr. 501G			27.9	30.0			137.9	143.2
Northrup-King PX50			23.1	24.6			143.0	149.0
Northrup-King PX556				23.0				136.1
Northrup-King PX580				24.4				146.9
Northrup-King PX610			24.7	25.9			134.2	135.8
Pioneer 3291	27.6	27.5	27.9	29.6	131.0	133.6	138.3	142.6
Pioneer 3365				29.2				137.7
Pioneer 3390				29.7				146.9
Pioneer 3505				28.5				153.9
Pioneer 3510	28.1	28.4	29.8	30.4	152.0	157.3	157.9	170.7
Pioneer 3567		25.2	25.8	28.1		137.1	137.5	141.1
Pioneer 3570				25.1				135.4
Pioneer 3715		21.9	22.4	24.2		131.4	130.9	129.4
SD 604				27.8				117.8

TABLE 17. CORN PERFORMANCE TRIAL, AREA D3, AGRONOMY FARM, BROOKINGS, 1969

Variety	Cross	Perfor- mance rating	Per- cent stalks broken	Per- cent mois- ture	Yield, bushels per acre		
					Mean	10,000	14,000
SD Exp 63	3x	1	4	25.1	110.5	102.6	118.4
McCurdy's 2 X 4	2x	2	5	26.8	108.0	101.9	114.1
SD PP104	M3x	5	9	27.8	105.6	99.5	111.8
SD PP105	M3x	4	3	27.6	105.5	100.8	110.2
Northrup-King PX545	3x	6	4	27.3	105.0	102.5	107.4
SD Exp 70	3x	8	8	26.7	102.1	97.6	106.7
Pioneer 3773	2x	7	1	24.8	101.9	96.3	107.8
SD Exp 75	3x	3	8	22.7	101.9	93.9	109.9
Northrup-King PX47	2x	10	4	26.6	101.1	98.3	103.9
Weathermaster EPx-5P	2x	15	5	28.2	101.0	103.6	98.5
Northrup-King PX556	3x	16	1	27.7	100.2	97.2	103.2
SD PP109	M3x	13	7	26.3	99.8	90.2	109.5
Coop S201	2x	12	5	25.6	99.3	98.1	100.5
Curry's SC-142	2x	14	4	25.7	99.3	94.5	104.0
SD Exp 52	3x	9	7	22.8	98.3	90.3	106.3
Northrup-King PX50	2x	18	5	26.3	98.3	93.8	102.8
Asgrow ATC 57	3x	19	4	27.6	98.0	93.8	102.3
Stull 627 TX	3x	20	2	27.2	97.6	89.9	105.4
SD Exp 54	M3x	17	8	23.7	96.4	87.8	105.0
McCurdy's 66-02	2x	27	1	28.7	96.3	90.8	101.8
Northrup-King PX525	3x	22	4	26.5	96.1	88.2	104.0
Northrup-King PX476	3x	11	8	20.3	95.7	92.1	99.3
McCurry's 3 X 4	2x	21	4	25.2	95.7	92.8	98.5
Stull 620 SX	2x	23	5	26.0	95.4	90.6	100.2
Pioneer 3579	3x	24	1	25.9	94.9	94.3	95.4
SD Exp 71	M3x	25	14	25.8	94.7	86.2	103.1
McCurdy's 96	4x	33	6	28.4	93.4	86.4	100.4
Curry's TC-342	3x	32	4	27.5	93.1	90.5	95.6
Stull 608 Y	2x	28	4	24.3	92.5	88.2	96.7
Pioneer 3715	3x	31	5	25.5	92.1	88.5	95.8
Western K-1175	4x	26	4	23.0	92.0	88.0	95.9
Northrup-King PX519	3x	38	3	27.0	91.3	84.3	98.3
Coop D110	4x	29	2	23.5	91.1	83.7	98.5
SD Exp 65	3x	35	8	25.8	91.0	87.7	94.2
Western KX-33	2x	30	6	22.1	89.9	86.6	93.3
Coop S102	2x	34	3	23.9	89.6	86.9	92.3
Weathermaster EP40	M2x	43	9	27.1	89.6	85.7	93.5
SD Exp 64	4x	37	4	23.6	88.9	80.6	97.2
McCurdy's 66-01	2x	44	1	25.8	88.3	82.6	93.9
Weathermaster EP 30	M2x	40	9	24.0	87.6	83.1	92.0
SD PP103	M2x	36	6	21.9	87.5	84.1	91.0
Asgrow IXL 4	2x	47	6	25.5	87.4	79.3	95.4
Pioneer 3910	2x	39	6	22.1	86.9	80.1	93.6
Pioneer 3582	2x	46	1	24.6	86.8	83.4	91.7
Weathermaster EPX-4	2x	41	3	23.4	86.8	82.2	91.4
Coop T106	3x	45	4	23.1	86.0	77.9	94.1
SD Exp 53	3x	48	20	23.4	85.5	79.9	91.2
Pioneer 3956	2x	42	3	21.3	84.9	86.4	83.4
Pioneer 3666	4x	51	4	24.5	84.0	81.5	86.4
SD PP101	M2x	49	5	23.0	83.5	79.3	87.6
SD 248	3x	50	10	23.6	83.3	79.8	86.8
Stull 604 SX	2x	54	6	25.6	82.2	72.6	91.7
SD 240	4x	52	12	24.3	81.9	79.3	84.5
Weathermaster EPX-3P	2x	55	16	23.3	80.2	74.9	85.4
SD 250	4x	53	10	22.4	79.7	77.7	81.6
Pioneer 3935	2x	56	1	20.4	74.8	66.6	83.0
SD PP102	M2x	57	8	22.7	71.3	66.2	76.3
Mean		24.9		24.9	92.7	87.7	97.6

C.V. = 2.8%

TABLE 18. TWO-, THREE-, FOUR-, AND FIVE-YEAR YIELD AND MOISTURE PERCENTAGE AVERAGES OF HYBRIDS ENTERED IN THE AREA D3 TRIALS, 1965-1969

Variety	Percentage moisture				Yield, bushels per acre			
	1965-69	1966-69	1967-69	1968-69	1965-69	1966-69	1967-69	1968-69
McCurdy 2 X 4				29.1				102.4
McCurdy 3 X 4		28.6	29.5	28.0	65.4	75.6		88.9
McCurdy 96				30.1				87.9
Northrup-King PX525			32.5	28.1			80.8	93.5
Northrup-King PX556				29.8				97.4
Pioneer 3582				28.2				89.4
Pioneer 3715			30.4	28.7			85.0	89.4
Pioneer 3773			31.4	28.2			72.4	91.2
Pioneer 3935				27.4				66.8
SD 240			24.5	26.5			69.0	77.5
SD 248	26.4	26.7	27.3	26.8	69.2	70.4	72.4	81.9
SD 250	25.7	25.1	25.5	25.3	66.9	65.8	67.9	79.0
SD Exp 52			26.6	25.9			77.3	91.6
SD Exp 53	26.1	25.9	26.7	26.5	76.5	72.9	74.0	82.0
SD Exp 54	26.6	26.2	27.1	26.6	71.7	75.8	77.9	88.9
SD Exp 63			28.6	26.7			85.0	101.3
SD Exp 64				25.5				87.4
SD Exp 65			28.6	28.1			79.4	83.9
SD Exp 70				28.6				85.9
SD Exp 71				28.6				89.9

TABLE 19. CORN PERFORMANCE TRIAL, MELVIN FREIER FARM, AREA D4, PARKSTON, 1969

Variety	Cross	Perfor- mance rating	Percent stalks broken	Percent moisture ear corn	Yield, B/A	
					1969	1968-69
Northrup-King PX610	3x	1	2	22.5	83.9	59.2
Pioneer 3365	3x	3	2	29.9	79.9	57.4
Wilson's WXS-1016	2x	2	1	18.4	78.0	
McCurdy's 2 X 4	2x	5	1	21.6	68.9	51.0
Wilson's WXS-1118	2x	4	0	14.1	67.8	
Pioneer 3390	M2x	12	0	31.9	67.0	47.2
Stull 627 TX	3x	6	4	19.1	66.9	
Green Acres 447	M3x	11	0	30.7	66.4	
SD Exp 76	3x	8	0	19.7	65.7	
Curry's SC-142	2x	7	3	16.9	65.3	52.6
Weathermaster 600	4x	13	1	29.0	65.3	
Green Acres L17	4x	16	2	29.6	65.0	
Green Acres 401	4x	15	2	28.6	64.5	47.1
Weathermaster EPX-6	2x	10	6	24.1	63.6	
Northrup-King PX556	3x	19	2	28.5	63.4	52.6
Pioneer 3510	2x	18	0	27.0	63.2	44.9
McCurdy's 3 X 4	2x	9	1	16.4	62.9	49.7
Pioneer 3505	M2x	17	2	23.4	61.6	47.4
Weathermaster EP60	M2x	23	3	29.5	61.4	
SD 420	4x	14	4	20.7	60.6	45.5
Pioneer 3387	2x	25	2	29.7	59.7	
Weathermaster EPX-5P	2x	22	1	21.8	58.7	
Stull 608 Y	4x	20	3	17.9	57.5	
Stull 620 SX	2x	21	0	18.3	57.5	
Stull 604 SX	2x	24	6	20.8	55.2	
Pioneer 3571	M2x	26	0	23.2	54.3	
Curry's SC-158	2x	28	2	25.1	53.3	44.6
Pioneer 3715	3x	27	1	17.8	51.1	43.2
McCurdy's 3 X 9	2x	29	1	24.7	50.0	40.4
Weathermaster EPX-8	2x	35	1	35.6	49.6	
McCurdy's 2 X 5	2x	31	0	24.5	49.5	42.9
Northrup-King PX580	3x	30	1	21.8	48.3	
McCurdy's HP5	3x	32	1	24.2	48.3	39.4
SD 604	4x	33	8	23.6	44.5	28.5
Pioneer 3567	2x	34	0	20.7	42.3	31.6
			Mean	23.7	60.6	

C.V. = 18.7%

TABLE 20. THE CORN HYBRIDS ENTERED FOR TEST IN THE 1969 CORN PERFORMANCE TRIALS AND THE TABLES IN WHICH THE RESULTS APPEAR

Variety	Table	Variety	Table	Variety	Table	Variety	Table
Asgrow ATC 57	17	N-K PX 610	13,14,15,16,19	McCurdy 2 X 5	15,19	SD PP101	7,10,11,17
Asgrow ATC 79	15,16	N-K PX 50	13,14,15,16,17	McCurdy 3 X 4	17,18,19	SD PP102	17
Asgrow IXL 4	15,17	N-K PX 446	6,7,8,9,10,11,12	McCurdy 3 X 9	19	SD PP103	7,10,11,17
		N-K PX 525	11,12,17,18	McCurdy 3 X 6	15,16	SD PP104	10,15,17
Barzan BXL-95-3	11	N-K PX 417	6,8,10	McCurdy 112M	15,16	SD PP105	10,15,17
Barzan BXL-100-3	11,15	N-K PX 442	6,7,8,10	McCurdy HP5	19	SD PP106	16
Barzan BXL-105-3	11,15	N-K PX 519	11,17	McCurdy 2 X 4	10,15,16,17,18,19	SD PP107	15
Barzan BXL-110-3	14	N-K PX 556	11,12,13,14,15,16,17,18,19	McCurdy HP4	15,16	SD PP109	15
		N-K PX 580	13,14,15,16,19	McCurdy 96	17,19	SD PP109	17
Coop S 102	10,17	N-K PX 47	13,15,17	McCurdy 66-01	17,18	SD PP110	15
Coop T 106	13,17	N-K PX 428	6,10	McCurdy 66-02	15,17	SD PP111	7,11
Coop D 110	10,17	N-K PX 476	7,10,11,17	McCurdy 66-03	15	SD PP112	10
Coop S 201	15,17	N-K PX 545	11,13,15,17				
Coop D 205	15			SD 220	6,8	Stull 604 SX	6,7,10,11,13,15,17,19
Coop T 207	15	Pioneer 3812	7,9,11,12	SD 230	6,7,8,9	Stull 608 Y	6,7,10,11,13,15,17,19
Coop D 209	15	Pioneer 3862	6,8	SD 240	6,7,8,9,11,12,17,18	Stull 620 SX	6,7,10,11,13,15,17,19
		Pioneer 388	6,8	SD 248	6,7,8,9,10,11,12,17,18	Stull 627 TX	6,7,10,11,13,15,17,19
Curry TC 358	13,15,16	Pioneer 3291	15,16	SD 250	7,9,10,11,12,17,18		
Curry SC-142	7,9,11,12,15,16,17,19	Pioneer 3510	13,14,15,16,19	SD 270	10,11,12,13,14	W'master EPX-3P	11,17
Curry TC-342	7,11,13,15,17	Pioneer 3681	7	SD 420	10,13,14,19	W'master EPX-4	11,17
Curry SC-158	15,19	Pioneer 3567	13,14,15,16,19	SD 604	15,16,19	W'master EPX-5P	13,17,19
Curry SC-162	15	Pioneer 3676	7,11			W'master EPX-6	13,19
Curry TC-345	15	Pioneer 3705	10,13,14,15,16,17,18,19	SD Exp 43	6,8	W'master EPX-8	13,19
		Pioneer 3872	6,8	SD Exp 48	6	W'master EP30	11,17
Green Acres 401	13,14,19	Pioneer 3773	10,13,17,18	SD Exp 52	10,11,12,17,18	W'master EP40	11,17
Green Acres 447	13,19	Pioneer 3926	11,12	SD Exp 53	10,17,18	W'master EP60	13,19
Green Acres EX12	15	Pioneer 3935	6,7,8,9,10,11,12,17,18	SD Exp 54	10,17,18	W'master 600	19
Green Acres L17	13,19	Pioneer 3956	6,7,8,9,10,11,12,17	SD Exp 59	6,7,8,9	W'master 475	13
		Pioneer 3365	13,14,15,16,19	SD Exp 63	10,11,12,17,18	W'master 375	11
Lincoln HQ-16	16	Pioneer 3390	13,14,15,16,19	SD Exp 64	10,17,18		
Mellowdent HQ-18	16,17	Pioneer 3505	13,14,15,16,19	SD Exp 65	10,11,12,17,18	Western KX-33	7,11,17
		Pioneer 3570	13,14,15,16	SD Exp 70	7,10,11,17,18	Western KX-55	11
Minn. 417	15,16	Pioneer 3582	10,13,14,17,18	SD Exp 71	10,17,18	Western KT-327	7
		Pioneer 3959	6,7,8,9,11,12	SD Exp 72	6,8	Western K-1175	7,17
Nebr. 501G	13,14,15,16	Pioneer 3985	6,8	SD Exp 74	6		
		Pioneer 3910	7,10,11,17	SD Exp 75	10,17	Wilson WXS-1016	15,19
		Pioneer 3666	10,17			Wilson WXS-1118	15,19
		Pioneer 3579	13,17				
		Pioneer 3571	15,19				
		Pioneer 3387	15,19				